

This is a proposed location - needs checking  
JRO 6/1/87

0367

Cathedral Bluffs Shale Oil Company  
Tract C-b Hole 22x-1  
NE 1/4 of the SW 1/4 of Sec. 1  
T3S, R97W, Rio Blanco County Colorado

LAT 39° 49' 02"  
LONG 108° 15' 50"

THESE LOCs  
DON'T CHECK  
OUT

~~1925~~ ~~1925~~ ~~1925~~ ~~1925~~ ~~1925~~  
1965 FWL  
2340 PSL  
6671 GL  
(FROM LARGE-SCALE TOP SURVEY (1"=600') BY

STATE COORDINATES:  
N: 188206  
E: 1,233,371

Loc +  
ELEV FROM  
B. ALLEN,  
CHAIRMAN  
6/1/87

- 952.0 Core Point SCARF & ASSOCI  
CBSOC DRAWG A00617
- 952.0-955.1 Oil Shale, light to medium olive brown, even with trace looped bedding, excellent competence, low to medium grade; several gilsonite streaks; several dark brown, asphaltic streaks and stringers; trace light grey to white, slightly pyritic, calcareous, tuff stringers; light greenish grey, pyritic stringers and laminae common; trace light brown, slightly asphaltic, tuff streaks, stringers and blebs; 0.2 core loss from 943.8-955.0.
- 955.1-957.3 Oil Shale, light to medium olive brown banded, even with trace looped bedding, fair to good competence, low grade; trace light brown to buff, marly streaks and blebs; trace gilsonite streaks; trace asphaltic streaks; trace white, calcareous, tuff streaks and blebs; several light greenish grey, pyritic stringers and laminae.
- 957.3-959.4 Oil Shale, medium to dark olive brown, even with looped and trace irregular bedding, good to excellent competence, medium to high grade; light brown to buff, slightly asphaltic, tuff streaks and stringers common; light greenish grey, pyritic tuff streaks and stringers common; trace gilsonite streaks; trace asphaltic streaks; several light greenish grey, pyritic stringers and laminae; trace white, tuff blebs.
- 959.4-962.5 Oil Shale, silty, light olive brown, even with trace looped bedding, good competence, very low to low grade; several gilsonite streaks; several asphaltic streaks and stringers; light greenish grey, pyritic stringers and laminae common; trace light greenish grey, pyritic tuff stringers; trace light brown to buff, slightly asphaltic, tuff blebs; a 0.1 light grey-brown, massive siltstone band at 961.8.
- 962.5-971.3 Siltstone, with oil shale: Siltstone, light and medium grey brown, massive, good competence, moderately calcareous, moderately hard and brittle; abundant finely disseminated gilsonite. Oil Shale, light olive brown, even bedding, excellent competence, very low grade; trace gilsonite streaks; trace greenish grey, pyritic streaks and laminae; trace buff to white, slightly marly, streaks and stringers; 0.3 band of light olive brown, massive, oil shale with abundant clay particles at 967.2 and a 0.2 band at 967.6.

- 971.3-972.6 Oil Shale, dark olive brown, streaked with even bedding, excellent competence, high grade; several light brown, slightly asphaltic tuff streaks and stringers; trace gilsonite and asphaltic streaks; trace light greenish grey, pyritic stringers and laminae; trace light grey brown, siltstone stringers.
- 972.6-973.7 Siltstone, medium grey brown, massive with streaked bedding, excellent competence, moderately calcareous, moderately hard and brittle; trace disseminated gilsonite; several medium olive brown, medium grade, oil shale streaks and stringers.
- 973.7-976.4 Oil Shale, silty, light to medium grey brown to light olive brown, even with trace wavy bedding, good competence, very low to low grade; light greenish grey, pyritic stringers and laminae common; trace asphaltic streaks and stringers; trace white, kaolinitic tuff streaks; light grey brown, siltstone bed with several medium brown, medium grade, oil shale stringers from 975.0 to 975.6.
- 976.4-977.6 Oil Shale, dark olive brown, even and looped bedding. Excellent competence, high grade; trace gilsonite streaks; trace asphaltic streaks and stringers; light brown to buff, slightly marly, stringers and streaks; 0.2 light brown, asphaltic tuff band at 976.6; trace scattered white, calcareous streaks.
- 977.6-979.8 Oil Shale, medium olive brown, even bedding, fair competence, medium grade; several light greenish grey, pyritic tuff stringers; trace gilsonite streaks; trace asphaltic streaks; trace light greenish grey, pyritic stringers and laminae; trace white, calcareous, tuff streaks and stringers.
- 979.8-985.4 Oil Shale, light to medium olive brown, even with trace irregular bedding, fair competence, low grade; asphaltic streaks and stringers common; trace gilsonite streaks; trace light blue grey, granular, analcitized, tuff stringers; light greenish grey, pyritic, tuff stringers and blebs; a 0.1 medium brown and white, calcareous and asphaltic stringer at 984.5.
- 985.4-986.6 Oil Shale, medium olive brown, even bedding, fair to good competence, medium grade; trace white, calcareous, tuff stringers; trace asphaltic streaks and stringers; light greenish grey, pyritic laminae common; trace gilsonite streaks.
- 986.6-996.4 Oil Shale, light olive brown, even with trace irregular bedding, fair to good competence, low grade; light greenish grey, pyritic tuff streaks and stringers and blebs common; trace light grey to white, calcareous, pyritic tuff streaks; trace gilsonite streaks; 0.1 light grey brown, siltstone band at 990.9 and a 0.05 band at 991.5.

- 996.4-998.3 Oil Shale, light olive brown, even bedding, good competence, very low grade; trace light blue grey, granular, analcitized tuff stringers; trace light greenish grey, pyritic stringers and laminae; trace gilsonite streaks.
- 998.3-1000.5 Oil Shale, dark olive brown, streaked with even bedding, fair to good competence, medium to high grade; trace gilsonite streaks; trace asphaltic streaks and stringers; trace dark brown, asphaltic tuff stringers; trace light greenish grey, pyritic tuff stringers; trace white, calcareous, tuff streaks and blebs; several light brown to light olive brown, marly streaks.
- 1000.5-1007.0 Oil Shale, medium olive brown, even with trace irregular bedding, fair competence, low to medium grade; trace gilsonite streaks; trace dark brown, asphaltic streaks; trace light brown, slightly asphaltic, tuff stringers and streaks; trace light greenish grey, pyritic tuff stringers and streaks; a 0.2 medium grey brown, siltstone band at 1002.5; a 0.3 light brown, asphaltic, tuff band with greenish grey, pyritic, tuff stringers at 1003.7; a 0.2 core loss from 1005.2-1005.4.
- 1007.0-1010.7 Oil Shale, light olive brown, even with trace irregular bedding, good competence, very low to low grade; trace light greenish grey, pyritic tuff stringers and streaks; trace buff, marly, blebs; few fractures well cemented with calcite; few white, calcareous, tuff stringers; trace asphaltic streaks; a 0.1 partially leached nacohlite vug with bladed structure and associated pyrite rims, partially filled with calcite, kaolinite, and detrital material at 1009.4.
- 1010.7-1012.3 Oil Shale, dark olive brown, streaked bedding, good competence, medium to high grade; trace gilsonite streaks; trace white, calcareous, streaks; trace light grey brown, marly, stringers and streaks.
- 1012.3-1015.0 Oil Shale, light to medium olive brown, even with trace streaked bedding, fair competence, low grade; trace asphaltic streaks; trace gilsonite streaks; trace white, calcareous, tuff blebs and streaks; trace light greenish grey, pyritic laminae; a 0.4 core loss from 1014.6-1015.0.
- 1015.0-1018.7 Oil Shale, light olive brown, even with trace irregular bedding, fair competence, low grade; light greenish grey, pyritic streaks and laminae common; trace white, calcareous, tuff stringers; a 0.1 buff to white, calcareous, tuff bands at 1015.4 and 1018.6.

- 1018.7-1022.2 Oil Shale, light olive brown, even with streaked and trace irregular bedding, good competence, very low grade; trace light greenish grey, pyritic tuff stringers; trace white, calcareous, tuff stringers; trace gilsonite streaks; trace asphaltic streaks; several light brown to buff, marly, streaks and blebs; from 1019.9 to 1020.4 a light brown, asphaltic, tuff bed; A 0.1 partially leached nacohlite vug with calcite, kaolinite, and detrital fill at 1021.3.
- 1022.2-1025.0 Oil Shale, dark olive brown to black, even with streaked bedding, excellent competence, high grade; trace light brown, low grade, oil shale stringers and bands; trace gilsonite streaks; trace medium brown, asphaltic, tuff streaks.
- 1025.0-1029.1 Oil Shale, light to medium olive brown, even bedding, good competence, medium grade; trace dark brown, asphaltic tuff streaks; trace light blue grey, granular, analcitized, tuff streaks; trace greenish grey, pyritic stringers; from 1025.0 to 1025.6 a medium grey brown, slightly calcareous, tuff with dark olive brown, high grade, oil shale stringers; from 1028.3 to 1028.5, a dark olive brown, high grade oil shale band.
- 1029.1-1034.2 Oil Shale, light olive brown, even bedding; good to excellent competence, low grade; tan, marly stringers and laminae common; greenish grey, pyritic laminae common; trace medium to dark brown, asphaltic tuff streaks; trace gilsonite streaks; trace dark brown asphalt streaks.
- 1034.2-1036.8 Oil Shale, medium to dark olive brown, streaked and irregular bedding, excellent competence, high grade; trace tan, marly stringers; trace gilsonite streaks; trace medium brown, asphaltic tuff stringers.
- 1036.8-1044.5 Oil Shale, light to medium olive brown, even with trace inclined bedding, good competence, low to medium grade; trace greenish grey, pyritic tuff streaks and stringers; trace light brown, tuff streaks; a 0.2 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1037.8; a 0.3 partially leached nacohlite vug with associated pyrite rims and remnant bladed structure, partly filled with calcite, kaolinite, pyrite and detrital material at 1041.0 and at 1042.2; abundant kaolinite on fracture surfaces; a 1.0 foot core loss from 1043.5-1044.5.
- 1044.5-1046.5 Oil Shale, light olive brown to light grey brown, even with trace looped bedding, good competence, low grade; greenish grey, pyritic streaks and laminae common; trace light brown, tuff streaks; trace gilsonite streaks; trace greenish grey, pyritic tuff stringers; abundant kaolinite on fracture surfaces; gradational contact.

- 1046.5-1056.2 Oil Shale, light to medium olive brown, even with trace looped and streaked bedding, good to excellent competence, low to medium grade; medium brown, asphaltic, tuff streaks and stringers common; trace white, calcareous, tuff streaks; trace greenish grey, pyritic stringers and laminae; a 0.2 medium to dark brown, granular, asphaltic, tuff band at 1052.2; trace gilsonite streaks and blebs; a 0.7 foot core loss from 1053.8-1054.5; light to medium grey brown, tuff bands with dark olive brown, oil shale stringers and streaks from 1054.9-1055.3 and from 1055.5-1055.8.
- 1056.2-1058.5 Tuff, medium brown, massive, moderately calcareous, moderately hard and brittle, excellent competence; abundant dark olive brown, high grade, oil shale streaks; trace greenish grey, pyrite streaks; trace dark brown, asphalt streaks; trace gilsonite streaks.
- 1058.5-1064.3 Oil Shale, light olive brown and dark olive brown banded, irregular bedding, excellent competence, low to medium grade; greenish grey, pyritic, tuff stringers common; dark brown, asphalt streaks and stringers common; trace gilsonite streaks and blebs; trace light blue grey, granular, analcitized, tuff streaks and blebs; trace dark brown, asphaltic tuff streaks; a 0.2 partially leached nacohlite vug with associated pyrite and detrital filling at 1060.5 and a 0.3 at 1060.8.
- 1064.3-1074.7 Tuff, medium brown, massive, moderately calcareous, moderately hard and brittle, excellent competence; dark olive brown, high grade, oil shale streaks common; gilsonite streaks common; trace white, calcareous, streaks; trace greenish grey, pyrite streaks; dark brown, asphalt streaks common; trace tan to buff, marly stringers and nodules; from 1065.5 to 1066.0, light olive brown, low grade, oil shale bed with few medium brown, tuff stringers and bands; from 1071.5 to 1071.6, light grey brown, very low grade, oil shale band.
- 1074.7-1077.0 Oil Shale, medium olive brown, even with streaked bedding, poor to fair competence, medium grade; trace pyrite streaks and blebs; trace dark brown, asphalt streaks; trace buff, granular, tuff blebs.
- 1077.0-1079.8 Oil Shale, light to medium olive brown, even with streaked and trace wavy bedding, fair competence, low to medium grade; few tan, marly stringers; trace pyrite streaks and blebs; few dark olive brown, medium grade, oil shale stringers; light olive brown, low grade, oil shale from 1079.0-1079.8.
- 1079.8-1083.6 3.8 foot core loss.

- 1083.6-1085.3 Oil Shale, dark olive brown, streaked with even bedding, fair competence, high grade; trace gilsonite streaks; few light olive brown, low grade, oil shale streaks; few sealed partings with calcite; gradational contact.
- 1085.3-1094.8 Oil Shale, medium olive brown, streaked with wavy and trace looped bedding, fair to good competence, medium grade; light blue grey, granular, analcitized, tuff streaks and stringers common; asphalt streaks common; trace gilsonite streaks and blebs; a 0.2 light brown, slightly asphaltic, tuff with oil shale streaks at 1087.1; a 0.4 medium brownish-grey, slightly analcitized, asphaltic, tuff band at 1090.8, a 0.05 at 1091.6, a 0.1 at 1091.7, a 0.05 at 1091.9; a 0.3 zone with abundant tuff stringers, numerous vugs, and moderate asphalt and pyrite at 1088.2; dark olive brown, high grade, oil shale from 1093.2 to 1093.6; a 0.05 white, calcareous, tuff bleb at 1094.2
- 1094.8-1100.2 Oil Shale, light to medium olive brown, streaked with inclined bedding, fair to good competence, low to medium grade; asphalt streaks and stringers common; a 0.05 white, calcareous, tuff bleb at 1095.8; abundant buff, marly stringers and bands from 1096.3 to 1096.9; a 0.3 light blue grey, and medium brown, slightly analcitized, asphaltic tuff band at 1096.5; light brown, calcareous, slightly asphaltic, slightly pyritic, massive, tuff from 1096.9 to 1097.4; gradational contact.
- 1100.2-1103.0 Oil Shale, dark olive brown, streaked with wavy bedding, good competence, high grade; trace gilsonite streaks; asphalt streaks common; few light brown, slightly asphaltic, tuff streaks and blebs; trace pyrite streaks and blebs.
- 1103.0-1106.6 Oil Shale, light olive brown, streaked and wavy bedding, fair to good competence, low grade; slightly marly in places; abundant asphalt streaks and laminae; abundant white, slightly granular, tuff stringers and blebs; abundant light brown, asphaltic, slightly pyritic, tuff stringers, streaks, bands and blebs from 1103.5 to 1104.9; a 0.2 light brownish grey, pyritic, asphaltic, tuff stringer at 1106.0; gradational contact.
- 1106.6-1111.9 Oil Shale, medium olive brown, even bedding, fair competence, medium grade; light blue grey, granular, analcitized, tuff streaks and blebs common; few white, slightly asphaltic, calcareous, tuff blebs and streaks; trace gilsonite streaks; gradational contact.

- 1111.9-1113.5 Oil Shale, light olive brown, even bedding, poor to fair competence, low grade; white, calcareous, tuff streaks and blebs common; abundant kaolinite on parting and fracture surfaces; trace gilsonite streaks; gradational contact.
- 1113.5-1125.8 Oil Shale, medium olive brown, even bedding, good competence, medium grade; a 0.1 zone with abundant white, calcareous, tuff stringers and blebs at 1110.1 and from 1119.1 to 1119.9; a 0.1 light blue grey, granular, analcitized, tuff stringer at 1122.2; trace gilsonite streaks; asphalt streaks common.
- 1125.8-1130.8 Oil Shale, light to medium olive brown, even bedding, poor competence, low to medium grade; trace white, calcareous, tuff streaks; trace gilsonite streaks; good competence from 1125.8 to 1127.9; medium grey, slightly pyritic, granular, tuff bed with oil shale fragments from 1129.9 to 1130.8.
- 1130.8-1131.8 Oil Shale, dark olive brown, looped bedding, poor to fair competence, high grade; tan, marly streaks common; asphalt streaks common; trace gilsonite streaks; trace pyrite streaks and blebs.
- 1131.8-1134.8 Oil Shale, light grey brown to light olive brown, even bedding, poor competence, low grade; light blue grey, granular, analcitized, tuff blebs common; asphalt streaks and laminae common; medium grey brown, asphaltic, tuff stringers common from 1134.3 to 1134.8.
- 1134.8-1136.3 Oil Shale, medium olive brown, even bedding, fair competence, medium grade; asphalt streaks and laminae common; few dark olive brown, high grade, oil shale stringers; kaolinite common on parting and fracture surfaces; trace gilsonite streaks.
- 1136.3-1140.4 Oil Shale, light to medium olive brown, even with streaked bedding, poor to fair competence, low to medium grade; asphalt streaks common; pyrite streaks and blebs common; abundant solution fractures with calcite, kaolinite, pyrite and collapsed leached nacohlite; calcite and kaolinite common on parting and fracture surfaces; abundant light blue grey, granular, analcitized, tuff stringers and blebs in solution fractures zone from 1138.3 to 1140.3.
- 1140.4-1145.8 Oil Shale, light grey brown to light olive brown, even with trace wavy bedding, poor competence, low grade; trace gilsonite streaks; asphalt streaks and blebs common; few white to light grey, calcareous, slightly asphaltic, tuff blebs and streaks; abundant kaolinite on parting surfaces; a 0.3 medium to dark olive brown, medium grade, oil shale band at 1141.8.

- 1145.8-1146.8 Oil Shale, medium to dark olive brown, even with streaked bedding, fair competence, medium to high grade; asphalt streaks common; trace tan, marly streaks.
- 1146.8-1149.3 Oil Shale, light to medium olive brown, even bedding, poor competence, low to medium grade; abundant solution fractures with collapsed leached nacohlite, pyrite and calcite; trace medium brown, asphaltic, tuff streaks; trace gilsonite streaks; trace evidence of leached nacohlite vugs; abundant calcite and kaolinite on fracture surfaces.
- 1149.3-1152.0 2.7 foot core loss.
- 1152.0-1156.9 Oil Shale, light olive brown, even with trace streaked and looped bedding, fair competence, low grade; pyrite streaks and stringers common; trace asphalt streaks; tan, marly stringers and laminae common; trace gilsonite streaks and blebs; a 0.4 leached nacohlite vug, with associated pyrite rims and remnant bladed structure at 1152.9; gradational contact.
- 1145.9-1164.6 Oil Shale, medium olive brown, even with looped and irregular bedding, fair competence, medium grade; medium to dark brown, asphaltic, tuff stringers and blebs common; trace asphalt streaks; trace tan, marly stringers and laminae; trace gilsonite streaks; light to medium brown, asphaltic tuff with oil shale streaks from 1162.9 to 1163.4
- 1164.6-1166.4 Tuff, light to medium brown, massive with wavy bedding, fair competence; slightly calcareous;; slightly asphaltic; moderately hard and brittle; trace white, calcareous streaks; abundant medium brown, medium grade, oil shale streaks and stringers; trace gilsonite streaks; trace asphalt streaks; a 0.2 leached nacohlite vug with associated pyrite rims and bladed structure at 1164.7, a 0.3 at 1165.0, and 1165.3.
- 1166.4-1168.5 Oil Shale, light olive brown, even with trace streaked bedding, good to excellent competence, low grade; trace pyrite streaks and blebs; trace medium brown, asphaltic tuff streaks; trace gilsonite streaks; gradational contact.
- 1168.5-1180.5 Oil Shale, light to medium olive brown, even with trace streaked and looped bedding, good to excellent competence, low to medium grade; white, calcareous tuff streaks common; medium brown, asphaltic tuff streaks and blebs common; greenish grey, pyrite stringers and laminae common; trace asphalt streaks; trace gilsonite streaks, few scattered 0.05 leached nacohlite vugs with associated pyrite rims and bladed structure; gradational contact.



- 1180.5-1186.2 Oil Shale, light to medium olive brown, even with trace looped and irregular bedding, fair competence, medium grade; trace dark brown, asphalt streaks and blebs; trace pyrite streaks and blebs; trace gilsonite streaks; trace tan, marly stringers and laminae; trace evidence of leached nacohlite vug in driller's rubble at 1185.0; a 0.05 tan, marly stringer at 1186.1; gradational contact.
- 1186.2-1207.4 Oil Shale, light olive brown, even with trace streaked and looped bedding, good to excellent competence, low to medium grade; trace gilsonite streaks and blebs; pyrite stringers and laminae common; trace white, calcareous tuff streaks and blebs; abundant light brown, slightly asphaltic, granular, tuff streaks and blebs from 1186.7-1187.7; a 0.1 leached nacohlite vug with associated pyrite rims and bladed structure at 1192.9; a 0.1 white, calcareous, tuff lens at 1193.4; a 0.2 leached nacohlite vug with associated pyrite rims and bladed structure at 1193.9, a 0.3 at 1201.3; a 0.05 light blue grey, granular, anal-citized, tuff stringer at 1198.7; abundant kaolinite on parting and fracture surfaces from 1205.0 to 1207.0; a 0.4 very low grade, marly, oil shale band at 1207.0.
- 1207.4-1208.9 Oil Shale, medium to dark olive brown, even with trace wavy bedding, excellent competence, medium to high grade; trace asphalt streaks; trace gilsonite streaks; few light brown, calcareous, tuff streaks and laminae; gradational contact.
- 1208.9-1215.9 Oil Shale, medium grey brown to medium olive brown, even bedding, poor competence, medium grade; trace gilsonite streaks; trace white, calcareous, streaks; abundant dark olive brown, high grade, oil shale stringers with asphalt streaks from 1215.0-1215.9; 1.8 core loss from 1212.6 to 1214.4; gradational contact.
- 1215.9-1223.5 Oil Shale, light olive brown, even with trace looped bedding, good competence, low grade; trace gilsonite streaks; trace pyrite streaks and blebs; abundant kaolinite on fracture surfaces; trace asphalt streaks; trace light blue grey, granular, analcitized, tuff blebs; a 0.5 core loss from 1218.7-1219.2; abundant buff to dark grey, asphaltic, calcareous, tuff streaks and blebs, partially leached from 1222.0 to 1222.5.
- 1223.5-1228.9 Oil Shale, medium olive brown and dark olive brown banded, even and looped bedding, excellent competence; high grade from 1223.5 to 1224.1, 1225.7 to 1226.9, 1227.3 to 1227.6 and 1228.1 to 1228.9; medium grade from 1224.1 to 1225.7, 1226.4 to 1227.3, and 1227.6 to 1228.1; trace gilsonite streaks; trace asphalt streaks; few scattered tan, marly, streaks and stringers; evidence of leached nacohlite vug with associated pyrite rims and calcite filling from 1225.1 to 1225.5

- 1228.9-1229.6 A 0.7 foot core loss with evidence of leached nacohlite vugs with associated pyrite rims and remnant bladed structure at 1229.6.
- 1229.6-1234.2 Oil Shale, light olive brown, even with trace looped bedding, fair to good competence, very low to low grade; slightly marly; trace gilsonite streaks; few calcite sealed partings and fractures; pyrite streaks and blebs common; few medium olive brown, medium grade, oil shale stringers; tan, marly bands common; few medium olive brown, medium grade, oil shale stringers; tan, marly bands common; a 0.2 zone with abundant calcic and asphaltic, tuff blebs and streaks at 1232.3; gradational contact.
- 1234.2-1237.0 Oil Shale, light olive brown and medium olive brown banded, even bedding, fair to good competence, low grade; trace white, calcareous, tuff streaks and blebs; trace gilsonite streaks; trace asphalt streaks; trace dark brown, asphaltic tuff streaks and blebs; a 0.2 zone with evidence of leached nacohlite vugs with associated pyrite rims, remnant bladed structure, and calcite and kaolinite mineralization at 1235.0; gradational contact.
- 1237.0-1238.9 Oil Shale, light grey grown to light olive brown, even with trace streaked and wavy bedding, fair to good competence, very low grade; marly; pyrite stringers and blebs common; trace gilsonite streaks; trace tan, slightly asphaltic, tuff blebs; tan, marly bands common; gradational contact.
- 1238.9-1239.9 Oil Shale, dark olive brown with medium olive brown banding, looped with even and trace wavy bedding, excellent competence, high grade; trace tan, tuff streaks; asphalt streaks common; trace gilsonite streaks; trace asphaltic tuff blebs; a 0.05 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1239.8.
- 1239.9-1244.2 Oil Shale, light olive brown, even with trace looped bedding, excellent competence, low grade; slightly marly; trace white, slightly calcareous, slightly pyritic, tuff blebs; trace light grey, pyritic tuff blebs; trace gilsonite streaks; light blue grey, granular, analcitized, tuff stringer at 1243.1; a 0.1 leached nacohlite vug with associated pyrite rims and calcite, and pyrite mineralization with remnant bladed structure at 1244.1.
- 1244.2-1245.4 1.2 foot core loss with evidence of leached nacohlite vugs with associated pyrite rims at 1245.4.
- 1245.4-1246.9 Oil Shale, medium to dark olive brown, looped with even bedding, poor competence, medium to high grade; trace white, calcareous, tuff streaks; abundant evidence of leached

nacohlite vugs with remnant bladed structure and pyrite, calcite and kaolinite mineralization, in driller's rubble from 1245.4 to 1245.9; few light olive brown, low grade, oil shale stringers; gradational contact.

- 1246.9-1250.0 Oil Shale, light olive brown, even with looped and irregular bedding, poor to fair competence, low grade; trace gilsonite streaks; asphalt streaks common; trace pyrite streaks and stringers; few scattered 0.05 leached nacohlite vugs with associated pyrite rims and remnant bladed structure; abundant solution fractures with pyrite, kaolinite and calcite mineralization from 1248.3 to 1249.2; medium olive brown, low to medium grade, oil shale stringers from 1246.9 to 1247.4; gradational contact.
- 1250.0-1253.5 Oil Shale, marly, light grey brown, even bedding, poor competence, very low grade; abundant pyrite streaks and stringers; trace gilsonite streaks; a highly brecciated bed with abundant clay material from 1252.5 to 1253.5.
- 1253.5-1255.0 1.5 foot core loss with evidence of leached nacohlite vugs at 1255.0.
- 1255.0-1258.1 Oil Shale, light grey brown, even bedding, fair to good competence, very low grade; marly; pyrite streaks and laminae common; abundant kaolinite on parting and fracture surfaces; light olive brown, low grade, oil shale from 1255.0-1255.7.
- 1258.1-1262.7 Oil Shale, light olive brown, even bedding, fair competence, low grade; asphalt streaks common; trace gilsonite streaks; trace pyrite streaks and laminae; abundant kaolinite on fracture surfaces.
- 1262.7-1265.4 2.7 foot core loss.
- 1265.4-1267.0 Oil Shale, light olive brown, even bedding, fair competence, low grade; asphalt streaks common; pyrite streaks and laminae common; trace gilsonite streaks; a 0.4 medium olive brown, medium grade, oil shale with high grade, oil shale streaks at 1266.0.
- 1267.0-1268.5 Oil Shale, medium olive brown with dark olive brown laminae, wavy bedding, good competence, medium grade; abundant tan, marly streaks and laminae; trace pyrite streaks and blebs; trace asphalt streaks; trace dark grey, pyritic, tuff streaks and blebs; a 0.4 zone with abundant tan, asphaltic tuff streaks and blebs at 1267.3; gradational contact.
- 1268.5-1273.8 Oil Shale, tan, light grey brown and light olive brown laminae, even and looped bedding, good to excellent competence, very low grade; trace asphalt streaks; a 0.3 zone with

- abundant pyritic tuff streaks and blebs; a 0.2 medium brown, slightly asphaltic tuff stringer at 1269.7; trace light blue grey, granular, analcitized, tuff stringer at 1270.5, a 0.05 at 1272.1; several light brown, slightly asphaltic, tuff stringers and bands from 1272.5 to 1273.4; abundant buff, marly stringers and bands.
- 1273.8-1275.0 Oil Shale, dark olive brown, looped with wavy bedding, excellent competence, high grade; abundant tan to light grey, slightly asphaltic, slightly pyritic, tuff streaks, stringers and blebs; trace gilsonite streaks; asphalt streaks common.
- 1275.0-1276.4 Oil Shale, medium olive brown and dark olive brown banded, wavy with trace looped bedding, excellent competence, medium to high grade; trace gilsonite streaks; asphalt streaks common; a 0.4 medium grey brown, asphaltic tuff band at 1275.2; trace tan, marly streaks.
- 1276.4-1278.3 Oil Shale, light to medium olive brown, even with trace looped and wavy bedding, fair competence, low to medium grade; trace gilsonite streaks; trace pyrite streaks and blebs; trace white, calcareous, tuff streaks; a 0.3 zone with abundant dark grey, asphaltic, partially leached, tuff streaks and blebs at 1276.4; few fractures well cemented with calcite.
- 1278.3-1279.6 Tuff, medium brownish grey, massive, moderately hard and brittle, very poor competence, calcareous; abundant tectonic fractures with asphalt and kaolinite mineralization.
- 1279.6-1281.5 Oil Shale and tuff dike; oil shale, dark olive brown, wavy with looped bedding inclined at 10 degrees, good competence, high grade; abundant, light brown, slightly asphaltic, tuff streaks; trace pyrite streaks; tuff, medium grey brown, massive, moderately hard to hard, good competence, calcareous; contact with oil shale is a jagged and irregular vertical line; few tan, marly stringers and bands in oil shale from 1280.8 to 1281.1.
- 1281.5-1284.6 Tuff, medium brownish grey, massive, moderately hard to hard, poor to fair competence, calcareous; trace gilsonite streaks and blebs.
- 1284.6-1295.3 Oil Shale, light olive brown, even with trace wavy bedding, excellent competence, low grade; tan, marly stringers common; trace white, calcareous, tuff streaks and blebs; trace gilsonite streaks; asphalt streaks common; trace pyrite streaks and laminae; trace light blue grey, granular, analcitized, tuff streaks; a 0.4 zone with abundant dark grey, asphaltic, pyritic, tuff streaks and blebs at 1285.3, a 0.3 zone at 1285.8; tuff dike, medium brownish grey, massive, calcareous, with trace asphalt streaks and blebs; tuff dike and

oil shale contact is an irregular, sharp, vertical line, from 1285.5 to 1286.5 and 1287.1 to 1288.2; bedding is inclined at 15 degrees from 1286.3 to 1286.7; a 0.1 zone with abundant white, slightly calcareous, slightly asphaltic, tuff streaks and blebs.

- 1295.3-1295.8 Tuff, light to medium grey brown, massive, poor to fair competence, moderately hard and brittle; trace asphalt streaks; trace pyrite streaks; MAHOGANY MARKER BED.
- 1295.8-1299.1 Oil Shale, light olive brown to light grey brown, even bedding inclined at 5 degrees with trace looped bedding, fair to good competence, low grade; pyrite stringers and laminae common; trace grey, marly stringers; trace medium brown, asphaltic, tuff streaks and stringers; trace gilsonite streaks and blebs.
- 1299.1-1300.4 Oil Shale, light olive brown to buff, even and looped bedding, excellent competence, very low grade; marly; trace pyrite streaks and laminae; trace asphalt streaks; trace gilsonite streaks; trace light blue grey, granular, analcitized, tuff streaks; a 0.1 light grey brown, slightly asphaltic, pyritic, tuff band at 1299.9.
- 1300.4-1301.9 Oil Shale, dark olive brown, even and looped bedding, excellent competence, high grade; light olive brown, low grade, oil shale laminae common; trace dark brown to black, asphaltic tuff streaks; trace gilsonite streaks; abundant tan to buff, marly laminae from 1300.4 to 1300.7; gradational contact.
- 1301.9-1303.2 Oil Shale, light to medium olive brown, even and looped with trace irregular bedding, excellent competence, medium grade; trace dark brown, asphaltic tuff streaks; trace tan, marly laminae; trace gilsonite streaks; gradational contact.
- 1303.2-1305.3 Oil Shale, light to medium olive brown, even with looped bedding, excellent competence, low to medium grade; tan, marly stringers and laminae common; trace pyrite streaks; trace dark brown, asphaltic, tuff streaks; a 0.05 medium olive brown, asphaltic, tuff stringer at 1304.5, a 0.1 at 1304.9.
- 1305.3-1306.7 Oil Shale, Medium to dark olive brown, streaked bedding, excellent competence, high grade; tan, marly stringers common; trace asphalt streaks; trace dark brown, asphaltic, tuff streaks; a 0.2 medium olive brown, medium grade; oil shale band at 1305.9.
- 1306.7-1309.8 Oil Shale, medium olive brown to dark olive brown, even with trace streaked and looped bedding, excellent competence, medium to high grade; tan, marly stringers and laminae common; trace pyrite laminae; dark brown, asphaltic,

tuff streaks common; a 0.2 white to buff, tuff band with dark olive brown, high grade, oil shale streaks at 1307.0; oil shale grades to low to medium grade from 1308.5 to 1309.3.

- 1309.8-1312.6 Oil Shale and tuff; oil shale, dark olive brown, even and looped bedding, poor to fair competence, high grade; tan, marly laminae common; trace gilsonite streaks; tuff, light to medium brownish grey, massive, poor competence, moderately calcareous; some evidence of vertical contact between oil shale and tuff, contact is sharp and jagged.
- 1312.6-1316.4 Oil Shale, dark olive brown, even and looped bedding, good competence, high to very high grade; moderately light weight and elastic; tan, marly stringers and laminae common; trace asphalt streaks; trace gilsonite streaks; a 0.05 zone with abundant pyrite streaks and laminae at 1314.7.
- 1316.4-1318.1 Oil Shale, light to medium olive brown, streaked and looped bedding, excellent competence, medium to high grade; tan, marly streaks, stringers and laminae common; trace gilsonite streaks; trace light grey, slightly asphaltic, tuff blebs; grades to a medium grade from 1317.5 to 1318.1.
- 1318.1-1320.1 Oil Shale, dark olive brown, even and looped bedding, excellent competence, high grade; asphalt streaks common; trace gilsonite streaks; trace tan, marly streaks; trace pyrite streaks and laminae; a 0.1 light olive brown, low grade, oil shale stringer at 1318.8; a 0.4 zone with abundant buff, slightly asphaltic, tuff stringers and blebs at 1319.7; gradational contact.
- 1320.1-1326.3 Oil Shale, medium to dark olive brown, even with trace looped and wavy bedding, excellent competence, medium to high grade; abundant dark olive brown, high grade, oil shale stringers and bands; trace gilsonite streaks; trace tan, marly streaks; few scattered dark brown, asphaltic, tuff blebs; trace light blue grey, granular, analcitized, tuff streaks; a 0.3 dark olive brown to black, high grade, oil shale band with streaked bedding at 1326.5.
- 1326.3-1328.9 Oil Shale, dark mahogany brown to black, streaked bedding, excellent competence, very high grade; very tough and elastic; medium olive brown, oil shale streaks common; dark brown, granular, asphaltic, tuff streaks common; trace gilsonite streaks.
- 1328.9-1332.4 Oil Shale, medium olive brown, even with looped bedding, excellent competence, medium grade; trace gilsonite streaks; dark olive brown, high grade, oil shale stringers and laminae common; trace white, calcareous streaks; trace medium brown, granular, asphaltic, tuff streaks;

abundant dark mahogany brown to black, very high grade, irregular, oil shale stringers from 1328.9 to 1329.5; gradational contact.

- 1332.4-1334.7 Oil Shale, medium to dark olive brown, even, streaked and irregular bedding, good to excellent competence, medium to high grade; dark olive brown, high grade, oil shale stringers and laminae common; trace dark brown, asphaltic tuff streaks; trace tan, marly stringers and laminae; trace gilsonite streaks.
- 1334.7-1336.1 Oil Shale, dark mahogany brown to black, streaked bedding, excellent competence, very high grade; medium olive brown, medium grade, oil shale streaks common; trace dark brown, asphalt streaks; trace gilsonite streaks; trace dark brown to black, asphaltic, tuff streaks.
- 1336.1-1337.4 Oil Shale, medium to dark olive brown, even with irregular bedding, excellent competence, high grade; light to medium olive brown, medium grade, oil shale stringers and laminae common; trace gilsonite streaks; medium brown, asphaltic, slightly calcareous, tuff stringers, bands and lenses common from 1336.2 to 1336.7.
- 1337.4-1339.9 Oil Shale, dark mahogany brown, streaked with trace even and looped bedding, good to excellent competence, high to very high grade; medium olive brown, medium grade, oil shale streaks common; trace dark brown, asphalt streaks; trace gilsonite streaks; trace dark brown to black, granular, asphaltic, tuff streaks; gradational contact.
- 1339.9-1345.7 Oil Shale, medium olive brown, even with looped and trace irregular bedding, good to excellent competence, medium grade; dark olive brown, high grade, oil shale stringers and laminae common; light grey to buff, marly stringers and laminae common; pyrite stringers and laminae common; trace pyrite streaks and blebs; trace medium to dark brown, granular, asphaltic, tuff streaks and blebs; a 0.1 dark grey, brassy, irregular, pyrite stringer at 1341.4 and a 0.2 at 1344.1; gradational contact.
- 1345.7-1348.9 Oil Shale, medium olive brown to medium grey brown, even and irregular bedding, poor to fair competence, low to medium grade; trace gilsonite streaks; tan, marly stringers and laminae common; trace medium brown, asphaltic tuff streaks and blebs; abundant solution fractures with calcite, kaolinite and pyrite mineralization.

- 1348.9-1355.9 Oil Shale, medium olive brown and dark olive brown, streaked and even with trace looped bedding, excellent competence, medium to high grade; asphalt streaks and laminae common; trace gilsonite streaks; trace pyrite stringers and laminae; trace dark brown, granular, asphaltic, tuff streaks and blebs; a 0.1 zone of light brown to buff, slightly calcareous, slightly asphaltic, tuff blebs at 1352.2; a 1.0 foot core loss from 1354.0-to 1355.0; gradational contact.
- 1355.9-1357.9 Oil Shale, light olive brown to light grey brown, even bedding, poor competence, low grade; pyrite streaks and laminae common; trace gilsonite streaks; abundant solution fractures with calcite and pyrite mineralization.
- 1357.9-1362.9 Oil Shale, medium olive brown, streaked bedding, good to excellent competence, medium grade; dark olive brown, high grade, oil shale streaks common; asphalt streaks and blebs common; trace gilsonite streaks; trace medium brown, granular, asphaltic, tuff streaks and blebs; abundant solution fractures and solution breccias with evidence of collapsed leached nacohlite with pyrite, and calcite mineralization from 1361.8 to 1362.9.
- 1362.9-1368.5 Oil Shale, medium to dark olive brown, even with looped and irregular bedding, poor competence, medium to high grade; trace gilsonite streaks; trace tan, marly, stringers and laminae; trace pyrite streaks; abundant solution fractures with evidence of collapsed leached nacohlite with calcite and pyrite mineralization; a 0.05 medium brown, slightly asphaltic, slightly calcareous, tuff stringer at 1363.9; a 0.05 leached nacohlite vug with associated pyrite rims at 1364.1.
- 1368.5-1370.5 Oil Shale, dark mahogany brown, streaked bedding, excellent competence, high grade; asphalt streaks common; medium olive brown, medium grade, oil shale streaks common; trace gilsonite streaks; pyrite streaks and laminae common.
- 1370.5-1388.7 Oil Shale, light to medium olive brown, even and irregular bedding, poor competence, low grade, dark greenish grey, pyrite stringers and laminae common; trace asphalt streaks; trace medium brown, asphaltic, tuff blebs and streaks; abundant solution fracture zones with collapsed leached nacohlite, pyrite, calcite and kaolinite mineralization; few scattered solution breccia zones; competence goes to fair from 1386.0 to 1388.7.
- 1388.7-1394.4 Oil Shale, medium olive brown, streaked with trace irregular bedding, fair competence, medium grade; pyrite streaks



- common; trace gilsonite streaks; light to medium olive brown, low grade, oil shale streaks common; trace asphalt streaks; trace medium and dark brown, granular, asphaltic, tuff streaks and blebs; solution fractures with evidence of collapsed leached nacohlite, and pyrite, calcite and kaolinite mineralization common.
- 1394.4-1395.7 Oil Shale, dark olive brown, streaked bedding, good competence, high grade; tan marly stringers and blebs common; trace asphalt streaks; trace brown, granular, asphaltic, tuff streaks.
- 1395.7-1401.5 Oil Shale, light olive brown, even with trace looped and irregular bedding, fair to good competence, low to medium grade; several dark brown, granular, asphaltic, tuff stringers and blebs; pyrite stringers and laminae common; trace gilsonite streaks; trace dark olive brown, high grade, oil shale stringers and streaks; a light brown to buff, highly brecciated, very low grade, marly bed from 1398.4 to 1399.4; gradational contact.
- 1401.5-1403.1 Oil Shale, dark mahogany brown to black, even bedding, poor competence, very high grade; light brown to buff, marly stringers and laminae common; few fractures, well cemented with calcite; gradational contact.
- 1403.1-1407.0 Oil Shale, medium olive brown, even bedding, very poor competence, medium grade; 0.7 foot of core with evidence of leached nacohlite vugs from 1403.8 to 1404.5; trace pyrite stringers and laminae; trace gilsonite streaks; trace pinpoint calcite; abundant 0.05 leached nacohlite vugs with associated pyrite rims scattered throughout; abundant solution fractures with evidence of collapsed leached nacohlite with calcite and pyrite mineralization; gradational contact.
- 1407.0-1411.6 Oil Shale, light olive brown, even bedding, poor competence, low grade; several 0.05 leached nacohlite vugs with associated pyrite rims from 1407.0 to 1407.9; abundant solution fractures and solution breccias with evidence of collapsed leached nacohlite, calcite and kaolinite; grades to a very low grade then barren from 1409.1 to 1410.0.
- 1411.6-1414.9 Oil Shale, dark olive brown to mahogany brown, irregular bedding, good competence, high to very high grade; light brown, slightly marly, streaks, stringers and laminae common; trace light greenish grey, pyritic tuff streaks and blebs; dark brown, asphalt streaks common.
- 1414.9-1417.4 Oil Shale, dark olive brown and light olive brown banded, irregular with trace even bedding, fair to good competence, medium to high grade; trace light greenish grey, pyritic tuff blebs and stringers; trace gilsonite streaks and blebs; medium brown, asphaltic, tuff band from 1415.3 to 1415.5; trace white, calcareous, tuff blebs and streaks; solution fractures and solution breccias zones with

evidence of collapsed leached nacohlite with pyrite and calcite common.

- 1417.4-1423.9 Oil Shale, medium olive brown, even with irregular and trace streaked and offset bedding, good competence, medium grade; trace buff to white, calcareous, tuff blebs and streaks; trace pyritic laminae and stringers; trace gilsonite streaks; several buff, marly stringers and bands; trace asphalt streaks; a 0.2 dark brown, asphaltic, tuff band at 1418.6, and a 0.05 stringer at 1422.1.
- 1423.9-1426.9 Oil Shale, light to medium olive brown, irregular with trace even bedding, poor to fair competence, low to medium grade; several claystone stringers and bands; abundant solution fractures and solution breccia zones with evidence of collapsed leached nacohlite with pyrite and kaolinite mineralization.
- 1426.9-1435.3 Oil Shale, medium olive brown, even with trace irregular bedding, poor to fair competence, medium grade; trace claystone stringers; trace scattered, white, pinpoint calcite; trace scattered, white, pinpoint calcite; trace asphalt blebs and streaks; abundant solution fracture and solution breccia zones with evidence of collapsed leached nacohlite, with pyrite and calcite mineralization from 1409.3-1430.3; trace gilsonite streaks; 1.0 foot core loss from 1429.3 to 1430.3.
- 1435.3-1437.9 Oil Shale, light olive brown, irregular bedding, poor to fair competence, low grade; pinpoint calcite common; pyrite stringers common; trace gilsonite streaks; solution fracture and solution breccia zones with collapsed leached nacohlite with pyrite and calcite mineralization common; a 0.2 band of medium to dark olive brown, medium grade oil shale at 1437.7 and 1437.9.
- 1437.9-1445.0 7.0 foot core loss.
- 1445.0-1446.1 Oil Shale, medium olive brown, even bedding, fair competence, medium grade; pyrite stringers and laminae common; trace asphalt streaks; trace pinpoint calcite; a zone of driller induced rubble, possibly from the core loss above.
- 1446.1-1447.1 1.0 core removed for gas test.
- 1447.1-1455.0 Marlstone, light to medium greenish grey, even with irregular bedding, poor competence; abundant clay size particles; pinpoint calcite common; pyrite streaks and stringers common; abundant solution fracture and solution breccia zones with abundant collapsed leached nacohlite, calcite and pyrite mineralization; very soft and friable; gradational contact.

- 1455.0-1458.6 Oil Shale marly, light olive brown to light grey brown, even with streaked bedding, poor competence, very low grade; pyrite stringers and laminae common; trace medium brown, granular, asphaltic, tuff streaks and blebs; abundant solution fractures and partings with pyrite and calcite mineralization; medium to dark brown, medium grade, oil shale stringers and white pinpoint calcite common from 1456.7-1457.4.
- 1458.6-1462.5 Oil Shale, dark olive brown, streaked bedding, fair competence, high grade; medium brown, medium grade, oil shale streaks common; asphalt streaks common; trace gilsonite streaks; trace dark brown, asphaltic, tuff streaks; medium olive brown, medium grade, oil shale band from 1459.5 to 1459.9.
- 1462.5-1466.3 Oil Shale, light olive brown to buff, even with looped and irregular bedding, fair competence, very low to low grade; slightly marly; pyrite streaks and laminae common; trace gilsonite streaks and stringers; trace greenish grey, pyritic tuff streaks.
- 1466.3-1469.7 Oil Shale, medium olive brown, streaked bedding, excellent competence, medium grade; tan, marly streaks and blebs common; asphalt streaks common; trace gilsonite streaks; trace dark brown, asphaltic, tuff streaks; a 0.3 light grey brown, marly, band at 1468.3.
- 1469.7-1472.8 Oil Shale, medium to dark olive brown, even and looped bedding, good competence, high grade; asphalt streaks common; trace pyrite streaks and laminae; trace gilsonite streaks; trace medium brown, asphaltic, tuff streaks; gradational contact.
- 1472.8-1475.0 Oil Shale, light to medium olive brown to medium grey brown, even and looped bedding, good to excellent competence, low to medium grade; trace gilsonite streaks; pyrite streaks and laminae common; asphalt streaks common; trace medium and dark brown, asphaltic, tuff streaks; a 0.2 band of medium and dark brown, asphaltic, tuff at 1473.0.
- 1475.0-1478.1 Oil Shale, light olive brown to light grey brown, even with looped bedding, fair competence, low grade; pyrite stringers and laminae common; trace gilsonite streaks; abundant tan, marly stringers and laminae; trace greenish grey, pyritic, tuff streaks; a band of medium brown, asphaltic, tuff with irregular pyrite stringers at 1477.7.
- 1478.1-1481.9 Oil Shale, light to medium olive brown, even with looped bedding, fair competence, low to medium grade; pyrite stringers and laminae common; trace asphalt streaks and blebs; trace gilsonite streaks; trace tan, marly stringers and laminae; a 0.1 light blue grey, granular, analcitized, tuff lens at 1478.4.

- 1481.9-1484.0 Oil Shale, marly, light grey brown, irregular bedding, poor competence, very low grade; pyrite stringers and laminae common; trace asphalt streaks; trace gilsonite streaks; abundant solution fractures with collapsed leached nacohlite, pyrite and calcite mineralization.
- 1484.0-1492.1 Oil Shale, medium olive brown, even and irregular bedding, poor to fair competence, low to medium grade; trace gilsonite streaks; pyrite stringers and laminae common; tan, marly stringers and laminae common; trace medium brown, asphaltic, tuff streaks and blebs common; 1.0 foot core loss from 1490.0 to 1491.0; gradational contact.
- 1492.1-1496.7 Oil Shale, medium to dark olive brown, even and streaked bedding, fair competence, medium to high grade; asphalt streaks and stringers common; trace gilsonite streaks; trace pyrite stringers and laminae; trace medium brown, asphaltic, tuff streaks and blebs; gradational contact.
- 1496.7-1505.1 Oil Shale, medium olive brown to medium grey brown, even, streaked and irregular bedding, fair to good competence, medium grade; pyrite stringers and laminae common; tan, marly stringers and laminae common; trace gilsonite streaks; trace greenish grey, pyritic tuff streaks; a 0.05 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1502.3.
- 1505.1-1506.9 Oil Shale, light olive brown to light grey brown, streaked and irregular bedding, good competence, low grade; pyrite stringers and laminae common; trace asphalt streaks; trace greenish grey, pyritic, tuff streaks, and blebs; trace gilsonite streaks.
- 1506.9-1515.9 Oil Shale, medium to dark olive brown, streaked and irregular bedding, fair competence, high grade; tan, marly streaks and blebs common; asphalt streaks common; trace medium brown, asphaltic, tuff streaks and blebs; several scattered 0.05 leached nacohlite vugs with associated pyrite rims and remnant bladed structure; abundant irregular pyrite stringers from 1507.0 to 1507.3; a 0.4 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1508.5; gradational contact.
- 1515.9-1525.6 Oil Shale, medium olive brown, streaked and irregular bedding, fair competence, medium grade; tan, marly streaks and blebs common; trace asphalt streaks; trace pyrite streaks; abundant solution fractures well cemented with calcite and pyrite, associated with collapsed leached nacohlite; a 1.0 foot core loss from 1521.0 to 1522.0; grades to low grade from 1525.0 to 1525.6.
- 1525.6-1528.7 Oil Shale, medium to dark olive brown, even with looped, and irregular bedding, excellent competence, high grade; trace light blue grey, granular, analcitized, tuff streaks and stringers; trace medium brown, asphaltic

tuff streaks; trace gilsonite streaks; trace tan, marly stringers and laminae.

- 1528.7-1533.7 Oil Shale, light olive brown to medium grey brown, even bedding, fair competence, low grade; trace brown, asphaltic, tuff streaks and stringers; pyrite stringers and laminae common; a 0.2 buff, claystone band at 1530.8; a 1.4 foot core loss from 1531.0 to 1532.4.
- 1533.7-1540.7 Oil Shale, dark olive brown, even and streaked bedding, excellent competence, high to very high grade; fairly tough and elastic; medium olive brown, medium grade, oil shale streaks and laminae common; pyrite streaks common; trace gilsonite streaks and blebs; trace light blue grey, granular, analcitized, tuff streaks; trace dark brown to black, asphaltic tuff streaks.
- 1540.7-1543.2 Oil Shale, medium olive brown, even bedding, fair competence, medium grade; pyrite stringers and laminae common; trace gilsonite streaks; trace medium brown, asphaltic, tuff streaks; a 0.2 dark brown, partially leached, granular, asphaltic, tuff band at 1542.2.
- 1543.2-1547.7 Oil Shale, medium to dark olive brown, streaked bedding, excellent competence, high grade; asphalt streaks common; trace dark brown, asphaltic, tuff streaks and blebs; tan, marly streaks common; trace light blue grey, granular, analcitized, tuff streaks and blebs.
- 1547.7-1551.1 Oil Shale, light olive brown, irregular bedding, poor competence, low grade; pyrite streaks and stringers common; trace gilsonite streaks; abundant solution fractures with associated collapsed leached nacohlite, pyrite and calcite; trace white, calcareous, tuff streaks.
- 1551.1-1555.9 Oil Shale, dark olive brown to black, irregular bedding, fair competence, high to very high grade; trace tan, marly streaks; trace gilsonite streaks and blebs; trace asphalt streaks; trace dark brown, asphaltic, tuff streaks; a 0.2 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1552.4.
- 1555.9-1558.4 Oil Shale, light olive brown, even and looped bedding, good to excellent competence, low to medium grade; tan, marly stringers and laminae common; trace greenish grey, pyritic, tuff streaks; trace asphalt streaks; trace gilsonite streaks.
- 1558.4-1559.6 Oil Shale, dark olive brown, even and streaked bedding, fair competence, very high grade; medium brown, medium grade, oil shale streaks common; trace gilsonite streaks; trace dark brown, asphaltic, tuff streaks.
- 1559.6-1561.7 Oil Shale, light olive brown to light grey brown, even bedding, fair competence, low grade; slightly marly; pyrite stringers and laminae common; asphalt streaks common; trace

gilsonite streaks; gradational contact.

- 1561.7-1566.9 Oil Shale, Marly, light olive brown and light grey brown, even bedding, good competence, very low grade; pyrite stringers and laminae common; dark olive brown, high grade, oil shale streaks common; trace light blue grey, granular, analcitized, tuff streaks and blebs; trace asphalt streaks; trace light greenish grey, pyritic tuff stringers and blebs; several solution fracture zones well cemented with calcite.
- 1566.9-1568.5 Oil Shale, light olive brown, even bedding, fair competence, low grade; light greenish grey, pyritic, tuff streaks and stringers common; several tan to buff, marly streaks and stringers; trace asphalt streaks.
- 1568.5-1570.6 Oil Shale, dark olive brown and light olive brown banded, even with looped and wavy bedding, fair competence, low to medium grade; light blue grey, granular, analcitized, tuff streaks, stringers and blebs common; trace dark brown, asphaltic tuff stringers; trace light brown, slightly marly, streaks and stringers; trace asphalt streaks; a medium to dark olive brown, medium to high grade, oil shale bed from 1568.5 to 1569.1.
- 1570.6-1572.4 Oil Shale, light olive brown to light golden brown, even with trace wavy and looped bedding, fair to good competence, low grade; light blue grey, granular, analcitized, tuff streaks, stringers and blebs common; trace gilsonite streaks; trace dark olive brown, high grade, oil shale streaks and stringers; trace asphalt streaks; a solution breccia zone with abundant clay size particles from 1572.0 to 1572.3.
- 1572.4-1574.0 Oil Shale, medium to dark olive brown, even with irregular bedding, fair to good competence, high grade; trace gilsonite streaks; trace asphalt streaks; trace pinpoint, white, kaolinitic, tuff blebs; a 0.1 leached nacohlite vug with associated pyrite rims and bladed structure at 1572.6, 1572.8, and 1572.9, several scattered 0.05 leached nacohlite vugs.
- 1574.0-1575.0 1.0 foot core loss.
- 1575.0-1576.5 Oil Shale, dark mahogany brown, irregular bedding, excellent competence, very high grade; trace gilsonite streaks and blebs; trace greenish grey, pyritic, laminae and streaks; trace white, kaolinitic, tuff streaks and blebs.
- 1576.5-1577.8 Oil Shale, medium olive brown, even with irregular bedding, good competence, medium grade; trace light brown to buff, slightly marly, stringers and bands; trace asphalt streaks; several greenish grey, pyrite laminae and streaks; trace dark brown, asphaltic, tuff blebs and streaks.

- 1577.8-1584.5 Oil Shale, light olive brown, even and irregular bedding, very poor to poor competence, low grade; abundant solution fracture and solution breccia zones with clay size particles and kaolinite; 1.2 core loss from 1583.2 to 1584.4.
- 1584.5-1587.0 Oil Shale, medium olive brown, streaked bedding, good competence, medium to high grade; dark brown, asphaltic stringers and blebs common; trace light blue grey, granular, analcitized, tuff blebs and streaks; dark olive brown, high grade, oil shale stringers common; trace asphalt streaks; light brown to buff, slightly marly, streaks, stringers, blebs and bands.
- 1587.0-1589.1 Oil Shale, light olive brown, even with looped bedding, poor to fair competence, low grade; trace gilsonite streaks; trace asphalt streaks; trace light greenish grey, pyritic, stringers and laminae; light brown to buff, stringers and laminae common; gradational contact.
- 1589.1-1591.5 Oil Shale, medium olive brown to medium grey brown, even bedding, poor to fair competence, medium grade; light greenish grey, pyrite stringers and laminae; trace light blue grey, granular, analcitized, tuff streaks and blebs; trace gilsonite streaks; trace asphalt streaks.
- 1591.5-1596.2 Oil Shale, light olive brown to light grey brown, even with trace irregular bedding, poor competence, low grade; trace scattered zones of pinpoint calcite; light greenish grey, pyritic, tuff stringers and laminae common; trace asphalt streaks; trace gilsonite streaks; trace light blue grey, granular, asphaltic, tuff streaks and blebs; trace light grey to white, marly stringers and streaks.
- 1596.2-1599.2 Oil Shale, medium olive brown to medium grey brown, even with trace irregular and looped bedding, poor to fair competence, medium grade; trace asphalt streaks; light greenish grey, pyrite stringers and laminae common; trace white, kaolinitic, tuff streaks; trace gilsonite streaks; gradational contact.
- 1599.2-1600.6 Oil Shale, dark mahogany brown to black, streaked with even bedding, good competence, high to very high grade; dark brown, asphalt streaks and blebs common; several gilsonite streaks; trace light brown, slightly asphaltic, tuff stringers; a 0.6 core loss from 1600.0 to 1600.6.
- 1600.6-1602.5 Oil Shale, medium to dark olive brown, streaked bedding, fair to good competence, medium to high grade; gilsonite streaks common; light greenish grey, pyrite, streaks and blebs common; several asphalt streaks; trace medium brown, asphaltic, tuff streaks and blebs; few scattered tan, marly streaks and blebs; gradational contact.

- 1602.5-1607.2 Oil Shale, light olive brown, even with irregular and trace looped bedding, good competence, low to medium grade; light greenish grey, pyrite laminae and stringers common; trace light blue grey, granular, analcitized, tuff streaks and stringers; trace gilsonite streaks; trace asphalt streaks; a 0.1 leached nacohlite vug with associated pyrite rims and remnant bladed structure at 1603.8; tan to buff, marly streaks and stringers common.
- 1607.2-1619.0 Oil Shale, medium olive brown, even with trace irregular bedding, fair to good competence, medium grade; light greenish grey, pyrite stringers and laminae; several asphalt streaks; trace gilsonite streaks; light greenish grey, pyritic, tuff stringers and streaks; a 4.0 foot core loss from 1611.0 to 1615.0; gradational contact.
- 1619.0-1622.0 Oil Shale, light olive brown, even with looped bedding, good competence, low grade; light greenish grey, pyritic, tuff stringers and streaks; trace asphalt streaks; trace gilsonite streaks; trace medium brown, medium grade, oil shale stringers.
- 1622.0-1623.4 Oil Shale, light olive brown, irregular with even bedding, fair to good competence, very low to low grade; several scattered zones of white pinpoint calcite; trace light greenish grey, disseminated pyrite; buff, marly stringers common; trace gilsonite streaks; a 0.2 solution fracture zone with evidence of collapsed leached nacohlite with associated pyrite at 1622.6.
- 1623.4-1627.3 Oil Shale, light to medium olive brown and buff banded, irregular with trace even bedding, good competence, low grade; medium olive brown, oil shale stringers, interbedded with irregular buff, marly stringers and blebs; trace asphalt streaks; trace light greenish grey, and brassy, pyritic tuff stringers and blebs; trace gilsonite streaks; trace medium brown, asphaltic, tuff blebs.
- 1627.3-1631.2 Oil Shale, medium olive brown, even with trace streaked bedding, good competence, medium grade; abundant light greenish grey, pyritic, tuff streaks, stringers and blebs; trace gilsonite streaks and blebs; several asphalt streaks; light greenish grey, pyrite streaks and laminae common.
- 1631.2-1637.1 Oil Shale, medium olive brown, even with irregular and offset bedding, fair to good competence, medium grade; trace light greenish grey, pyritic, tuff streaks and stringers; trace gilsonite and asphalt streaks; several scattered zones of white pinpoint calcite; several solution fracture zones with evidence of collapsed leached nacohlite and leached nacohlite vugs with remnant bladed structure and associated pyrite rims from 1631.5 to 1635.0.
- 1637.1-1639.7 Marlstone, light grey brown to buff, even bedding, very poor to



poor competence; abundant pinpoint calcite; a zone of highly brecciated rock with abundant pyrite mineralization and clay size particles from 1637.4 to 1638.6

1639.7-1641.0 Oil Shale, marly, light olive brown to buff, even bedding, good competence, very low to low grade; trace white to light grey, slightly pyritic, calcareous, tuff stringers and blebs; abundant white, pinpoint calcite; light greenish grey, disseminated, pyrite common; trace asphalt streaks; trace medium olive brown, medium grade, oil shale stringers.

1641.0 Total Depth.